

Fig. 1 Internal DNA sequence of the Phl p 4 gene

C A C C C G G A A G G G G G T G C T G T T C A A C A T C C A G T A C G T C A A
C T A C T G G T T C G C C C C G G G A G C C G G C G C G G C G C C A T T G T
C G T G G A G C A A G G A G A T C T A C A A C T A C A T G G A G C C G T A C
G T G A G C A A G G A C C C C G T C C A G G C C T A C G C C A A C T A

Fig. 2 3' end of the nucleic acid sequence of the Phl p 4 gene

A C T A C T G G T T C G C C C C G G G A G C C G G C G C G G C
G C C A T T G T C G T G G A G C A A G G A G A T C T A C A A C
T A C A T G G A G C C A T A C G T G A G C A A G A A C C C C A
G G C A G G C C T A C G C C A A C T A C A G G G A C A T C G A
C C T C G G G A G G A A C G A G G T G G T G A A C G A C G T C
T C C A C C T T C A G C A G C G G T T T G G T G T G G G G C C
A G A A A T A C T T C A A G G G C A A C T T C C A G A G G C T
C G C C A T C A C C A A G G G C A A G G T G G A T C C C A C C
G A C T A C T T C A G G A A C G A G C A G A G C A T C C C G C
C G C T C A T C A A A A A G T A C T T G A

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Fig. 3 Localisation of Phl p 4 peptides in the deduced amino acid sequence of the Phl p 4 allergen

1 Y F P P P A A K E D F L G C L V K E I P P R L L Y A K S S P A Y P S V L G Q T I
Y F P P P A A K E D F L G X L V K E I P P R L L Y A K S S P A Y P

Peptide P1

41 R N S R W S S P D N V K P I Y I V T P T N A S H I Q S A V V C G R R H G V R I R

81 V R S G G H D Y E G L S Y R S I Q P E E F A V V D L S K M R A V V W V D G K A R T.
G L X Y R X L X P E

Peptide P3

121 A W V D S G A Q L G E L Y Y A I H K A S T V L A F P A G V C P T I G V G G N F A

161 G G G F G M L L R K Y G I A A E N V I D V K L V D A N G T L H D K K S M G D D H
K X M G D D H

Peptide P4

201 F W A V R G G G G E S F G I V V A W K V R L L P V P P T V T V F K I P K K A S E
F X A V R A P E

241 G A V D I I N R W Q V V A P Q L P D D L M I R V I A Q G P T A T F E A M Y L G T
G A V D I I

Peptide P5

281 C Q T L T P M M S S K F P E L G M N A S H C N E M S W I Q S I P F V H L G H R D

321 N I E D D L L N R N N T F K P F A E Y K S D Y V Y E P F F P K R V W E Q I F S T W

361 L L K P G A G I M I F D P Y G A T I S A T P E W A T P F F P H R K G V L F N I Q Y
S A T P F X H R K G V L F N I Q Y

Peptide P2

401 V N Y W F A P G A G A A P L S W S K E I Y N Y M E P Y V S K N P R Q A Y A N Y R
V M E P Y V S I N P V Q A Y A N Y

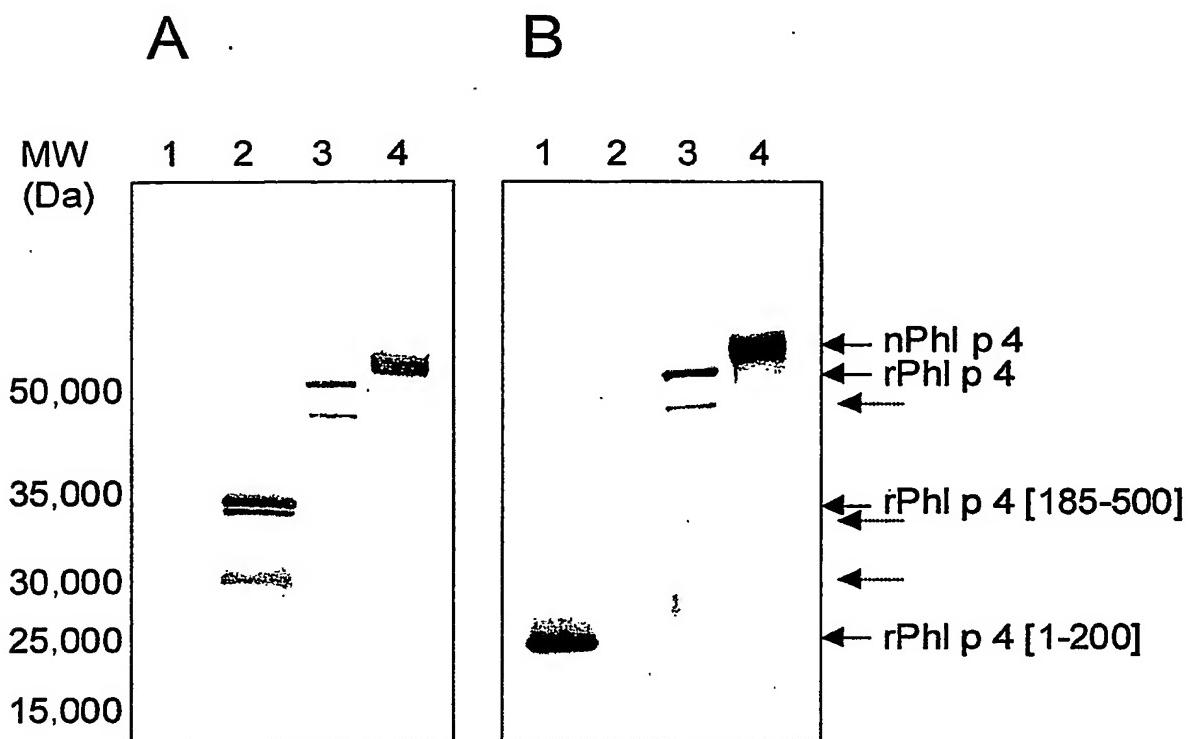
Peptide P6

441 D I D L G R N E V V N D V S T F S S G L V W G Q K Y F K G N F Q R L A I T K G K

481 V D P T D Y F R N E Q S I P P L I K K Y .

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Fig. 4 Determination of the identity of recombinant Phl p 4 (rPhl p 4) by means of the monoclonal antibodies 5H1 (blot A) and 3C4 (blot B) by Western blot



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Fig. 5 Determination of the reactivity of recombinant Phl p 4 (rPhl p 4) with IgE from sera of grass pollen allergy sufferers by Western blot

